

INITIATIVES FOR REDUCING ENVIRONMENTAL IMPACT

Cleaner Emissions

Cleaner Gas Emissions

Mazda is committed to mitigating air pollution from exhaust gas. To this end, the Company is actively developing low-emission vehicles, clearing the emission regulations in each country/region to introduce these vehicles globally.

Development of Unique Single-Nanotechnology

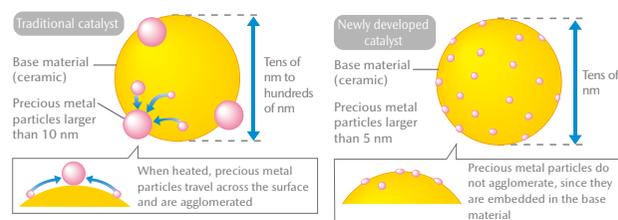
Mazda pays attention to global movements toward tighter control of exhaust emissions and fuel economy, market expansion due to rapidly growing emerging countries, and depletion of scarce resources. The Company has developed its unique single-nanotechnology and soot (PM) oxidation catalyst, promoting reduction of the use of precious metals and cleaning of exhaust gases.

Single-Nanotechnology

Based on the belief that it is important to help catalytic converters exercise excellent catalyst performance after reducing the use of scarce elements, such as rare metals (precious metals) and rare earths (ceria material), Mazda developed the single-nanocatalyst*¹ that achieves both cleaner exhaust characteristics and higher durability.

The Company has been progressively introducing the technology into gasoline engines and clean diesel engines on a global basis.

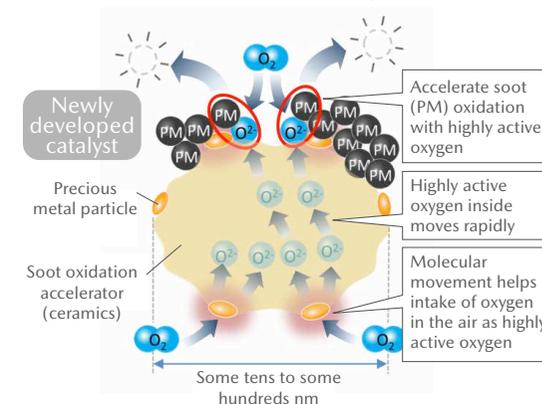
Model of precious metal dispersion by new catalyst technology



Soot (PM) Oxidation Catalyst

Mazda has developed a unique PM oxidation technology for diesel engine catalysts, which enables rapid combustion and removal of soot (PM) and reduces CO₂ emissions. Compared with conventional catalysts, this technology effectively utilizes oxygen not only on the surfaces of catalyst particles but also of their inside, and enables supply of a larger amount of highly active oxygen for soot (PM), thereby achieving dramatic improvement in functions. The introduction of this technology has reduced the use of precious metals, or rare elements, to around one-tenth, along with the durability sufficient to maintain the catalytic function throughout the entire vehicle life cycle.

Mechanism of soot (PM) oxidation catalyst



Proper Management of Chemical Substances and Heavy Metals

Mazda publishes Management Standards for Environmentally Hazardous Materials, specifying substances and heavy metals whose use in parts and materials it purchases is subject to restrictions (prohibited substances and substances for which reporting is required), to properly control the use of such hazardous materials.

*¹ Catalyst featuring single-nanotechnology to control finer materials structures than nanotechnology

Endeavor for Carbon Neutrality by 2050

Resource Circulation

Basic Approach to Environmental Protection, and Environmental Promotion Framework

Environmental Management

Initiatives for Reducing Environmental Impact

Biodiversity Conservation

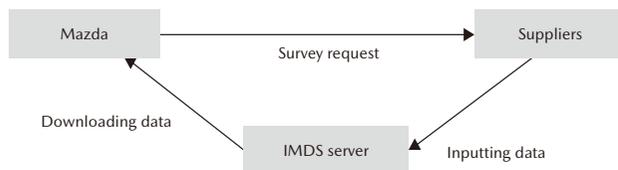
Collection and Management of Automotive Parts Materials

Mazda is working across its entire supply chain to reduce the use of environmentally hazardous materials such as lead, mercury, hexavalent chromium and cadmium. Using the standardized IMDS,*¹ international system, the Company gathers information on the materials from suppliers (Met all of the voluntary targets of the Japan Automobile Manufacturers Association, Inc. (JAMA) (reduction of the use of lead and mercury, and prohibition of the use of hexavalent chromium and cadmium) by February 2007, earlier than the scheduled deadlines).

Measures Related to Application of IMDS

- The Company developed and published the guideline that helps suppliers to correctly input IMDS data.
- The data gathered through IMDS is used to calculate the Company's vehicle recycling rate and to comply with various regulatory regimes for chemical materials, such as REACH*² in Europe.

How IMDS Works



VOC Reductions in Vehicle Cabins

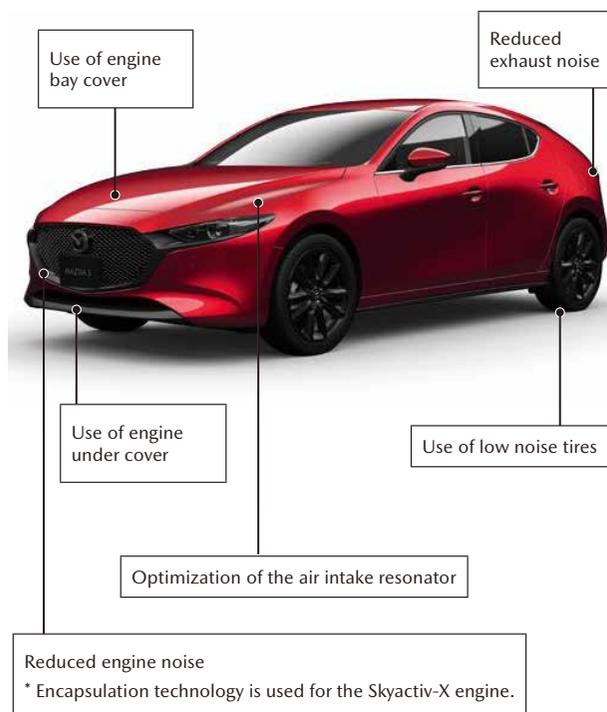
To maintain a comfortable cabin environment, Mazda is committed to reducing VOCs*³ such as formaldehyde, toluene and xylene, which have been implicated as possible causes of sick building syndrome.

- In new models, starting with the Demio (Mazda2 overseas)*⁴ launched in 2007, Mazda reduced VOCs in the main materials used in the cabin, such as plastics, paints, and adhesives, thereby conforming with the indoor aerial concentration guidelines established by Japan's Ministry of Health, Labour and Welfare. (The MX-30, introduced in FY March 2021, followed the above guidelines.)

Reduction of Vehicle Noise

Mazda has established its own noise standards which are even stricter than the most recent legal requirements. In compliance with the above in-house standards, the Company has been working to reduce the road traffic noise of all the passenger vehicles and commercial vehicles it produces. The Company has also been actively addressing the development of technologies to reduce the three major vehicle noises: engine noise, air intake/exhaust system noise, and tire noise.

Example of Anti-Noise Measures (Mazda3)



[Manufacturing] Air Pollution Prevention:

Actively Adopting Fuels that Reduce Environmental Burdens

Mazda is continuing efforts to reduce the emission of sulfur oxides (SOx), nitrogen oxides (NOx), dust and soot, fine particles, vapors, and volatile organic compounds (VOCs).

In addition, Mazda is shifting the use of fuel oil to that of city gas and makes other efforts to actively adopt materials that reduce the environmental burden.

NOx emissions and SOx emissions (P117)

VOC Reductions: Body-Painting Lines

In FY March 2022, Mazda made steady progress toward achieving the target of reducing VOC emissions from vehicle body paint in body-painting lines to 19.0 g/m² or less. The target was achieved as a result of various measures. Such measures include the Three Layer Wet Paint System introduced as the standard process in all plants in Japan and major plants overseas, the Aqua-Tech Paint System (P24) that delivers world-leading environmental performance, a low-VOC paint that the Company developed and introduced, and improved efficiency in thinner recovery in cleaning operations.

VOC waste emissions (P117)

[Manufacturing] Reducing Emissions of PRTR-Listed Substances

With various efforts, such as the introduction of the Aqua-Tech Paint System into the painting process and improvements to the efficiency of thinner recovery for cleaning operation, in FY March 2022 the amounts of substances that are designated under the PRTR Law*⁵ released into the water system and the atmosphere decreased by 78% from FY March 1999 levels to 620 tons. Mazda will continue working to reduce emissions of PRTR-designated substances.

Emissions of PRTR-listed substances (P117)

*1 International Material Data System

*2 Registration, Evaluation, Authorization and Restriction of Chemicals

*3 Volatile Organic Compounds

*4 As of 2007

*5 Act on Confirmation, etc. of Release Amounts of Specific Chemical Substances in the Environment and Promotion of Improvements to the Management Thereof. PRTR: Pollutant Release and Transfer Register